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*Psychology and Industrial Efficiency.* By Hugo Münsterberg.  
Boston and New York: Houghton Mifflin Co., 1913. 8vo,  
pp. 321. \$1.50 net.

This book is only one of many, appearing in the last few years, which reveal a movement toward a conscious adoption of definite psychological methods and principles in the practical affairs of life. Professor Münsterberg has constituted himself the knight errant of this movement, and having shown how the problems of the teacher, lawyer, and physician may be solved, he has now turned his attention to those of the business world.

In the introduction there is an attempt to outline a new science for which the name psychotechnics is coined. One might here raise the question whether the application of old methods to new fields or even the devising of new methods constitutes a science.

The author approaches the subject from the standpoint of the employer of labor. The employee is scarcely more than an industrial machine to be measured and speeded up. In his chapter on vocational guidance and fitness he does, indeed, adopt the other viewpoint, but even here men are the shifting pawns of a social system. He saves himself from criticism by taking the position that the psychologist is responsible for the means only of the investigation not for the ends. "Economic psychotechnics may serve certain ends of commerce and industry, but whether these ends are the best ones is not a care with which the psychologist has to be burdened."

He conceives the economic problems of business to be concerned, first, with the choice of the best possible man; second, with the effort to secure the best possible work from this man; third, with the exploitation and distribution of the product. All this sounds very like the propaganda of scientific management. After discussing vocational fitness, etc., Professor Münsterberg shows how the methods of experimental psychology may and should be applied to the choice of the man. Two methods are outlined which may be used in industrial investigations. In the first, the activity may be reproduced in the laboratory upon a reduced, measurable scale and the men tested here. It is not advisable he thinks, for reasons which he gives, to reproduce the actual mechanism; but something should be contrived which would arouse the usual, characteristic mental attitude. The second method would analyze the mental process involved in the industry into its component parts, memory, imagination etc., and test these separately in individual workmen.

As an illustration of the first method an ingenious experiment for testing the motor-men on electric cars is described. A track was made on paper. The entire space in the track and at the sides was divided into squares. One row of squares filled the track and four rows paralleled it on either side. The spaces in the track were lettered from *A* to *Z*, those on the sides were filled in an irregular way with the first three integers; 1 represented a pedestrian who moved one step—one square; 2, a horse moving twice as fast, that is, two squares; 3, an automobile which moved three times as fast—three squares. The black figures were supposed to move parallel with the track, the red across the track. This diagram was then arranged to run over cylinders so as to be exposed in a serial fashion by the man to be tested. He then called the letters of those units in the track at which the red figures on the side would land if they took the steps indicated by the digits. The man was graded on the number of omissions, the number of incorrect calls, and the total time taken.

Professor Münsterberg says: "The test of the method lies in the fact that they really pass through the experiment with the feeling that they have on their cars. The necessity of looking out in both directions, right and left, for possible obstacles, of distinguishing those which move toward the track from the many which move along the track, the quick discrimination among the various rates of rapidity, the steady forward movement of the observation point, the constant temptation to give attention to those which are still too far away or to those which are so near that they will cross the track before the approach of the car, in short the whole complex situation with its demands on attention, imagination, and quick adjustment soon brings them into an attitude which they themselves feel as identical with that in practical life. On the other hand, the results show a far-reaching correspondence between efficiency in the experiment and efficiency in the actual service."

Another illustration of this method follows. A ship company asked whether it would not be possible to find psychological methods for the elimination of such officers as would not be able to face an unexpected, suddenly occurring complication. The card-sorting test which was devised to determine this ability seems far less adequate than the one described for the case above. While it demands instant decision without time for reflection, the element of danger, the emotional situation which is the cause of the motor paralysis and overthrow of reason, is lacking.

In the experiments in the interests of the telephone company the second method was used, that is, attention, memory, general intelligence,

exactitude, and rapidity of reaction were tested, and the efficiency estimated from the combined results. The tests used were simple ones of laboratory and classroom.

Part Two, the section treating of the best possible work is, in brief, a review of work done in psychological laboratories on learning, together with some of the results attained in factories under scientific management. The conclusions drawn from the study of monotony seem rather unconvincing as given. Part Three treats mainly advertising, display, buying and selling. Experimentation concerning such industrial agencies is described briefly.

The book is a clear review of the attempt to apply mental tests in the industrial field. It is written for the reader who is interested but not trained in experimental methods.

Professor Münsterberg reiterates his conviction as to the psychological value of the tests which he illustrates. Yet, after reading the book, one is left, somehow, with the impression that psychology has little to offer here which common sense would not suggest. This impression may be partly due to the fact that the author has not discussed underlying principles but has devoted himself to the practical side of the tests. It may also arise from the fact that he has chosen simple tests, easily understood and easily applied. The untrained reader cannot know the psychological significance of such tests. Nor can he distinguish those that have been elaborated under the strictest experimental control and tried out in many laboratories from those which have not this scientific value.

Psychology can offer no cure-all for economic ills. On the other hand, no one interested in economic questions can ignore the truth that the final explanation of human behavior is psychological. In the very nature of things, man can never become a mere machine and therefore can never be measured and weighed and tested to the degree that a machine can. Professor Münsterberg, least of all, would be so understood. The point which perhaps he does not emphasize sufficiently is this: It is just these differences between men and machines which constitute the crux and core of social and economic problems and it is at this point possibly that psychology could help most effectually.

The book does not touch at all the big questions of economics, nor attempt to psychologize them. What it does discuss is administrative details. Along such lines are many suggestive methods and expedients.

STELLA B. VINCENT